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Do Performance-Based Codes Support Universal Design in Architecture?

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Abstract. The research project ‘An analysis of the accessibility requirements’ studies how Danish architectural firms experience the accessibility requirements of the Danish Building Regulations and it examines their opinions on how future regulative models can support innovative and inclusive design – Universal Design (UD). The empirical material consists of input from six workshops to which all 700 Danish Architectural firms were invited, as well as eight group interviews. The analysis shows that the current prescriptive requirements are criticized for being too homogenous and possibilities for differentiation and zoning are required. Therefore, a majority of professionals are interested in a performance-based model because they think that such a model will support ‘accessibility zoning’, achieving flexibility because of different levels of accessibility in a building due to its performance. The common understanding of accessibility and UD is directly related to buildings like hospitals and care centers. When the objective is both innovative and inclusive architecture, the request of a performance-based model should be followed up by a knowledge enhancement effort in the building sector. Bloom’s taxonomy of educational objectives is suggested as a tool for such a boost. The research project has been financed by the Danish Transport and Construction Agency.

Keywords. Universal Design, design practice, accessibility, building regulations, performance-based codes

1. Introduction

The Disability Policy Plan 2013 ‘A Society for All’ [1] was launched by the Danish Government and it emphasizes the challenge of ensuring innovative and flexible design. Hence, the Danish Transport and Construction Agency initiated the research project ‘An analysis of the accessibility requirements’ in 2014. The aim was to analyze and develop new models for future building regulations that support innovative and inclusive architecture. An interest for performance-based codes had already been presented in a pilot project involving a group of people with disabilities and a group of experienced architects within the field of accessibility and Universal Design (UD). Both groups pointed to a growing need for knowledge and insight in the field of UD [2]. All the 700 members of the Danish Association of Architectural Firms, a number of big engineering companies and the 98 Danish municipalities were invited to six workshops. A total of 68 professionals participated, representing 41 firms and 12 municipalities.

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Furthermore, group interviews were organized with eight architectural firms. Although these did not specialize in UD, they had a very good reputation in general.

2. A Performance-Based Model to Support Flexibility

A majority of the architectural firms found the accessibility requirements too rigid and homogeneous. It was regarded as an absurdity that the same prescriptive requirements were applied to different types of buildings and sizes of buildings. Hospitals and care centers were building types where it is clear that accessibility should have priority. It was not the intention to deny access or spatial experience to other types of building, but UD was not a part of the architectural ambition.

Therefore, application categories already known from the performance-based fire codes were suggested in order to differentiate between building types and define the appropriate level of accessibility. ‘Accessibility zoning’, and working with different accessibility levels in relation to the use and the users in a building, was identified as a possibility for discussion and to set priorities to avoid unreasonableness. It seems that it was easier to imagine a disabled client or guest than a disabled employee when thinking about the users.

“... and maybe you can slacken some other places. Places where it is unlikely that there is a need for accessibility. (...) in the arena-project it makes quite a lot sense to define a higher level than the minimum requirement of the Building Regulations for the places where the audiences go.” (Group interview)

3. Perspectives

The analysis shows that the anticipation of increased flexibility was the motive for a performance-based model. A shift to a new model would not in itself be adequate to promote/boost innovative and inclusive architecture. This is partly because the professionals’ understanding of the users was client-oriented rather than citizen-oriented, and therefore quite limited. It is also because the professionals’ understanding of the potential scope of inclusiveness in the built environment was too limited. Consequently, a shift in model should go hand in hand with a knowledge enhancement effort of the building sector.

Knowledge already plays a role in the design process. In the initial UD process, the architects put context-dependent knowledge (own experience, input from the users, inspiration) before context-independent knowledge (the Building Regulations, standards), but this changes later in the process [3]. Furthermore, knowledge can function as an eye-opener, encouraging the architect to reflect on her understanding of the users and making the architect change the mindset and the view on the users [4].

We suggest Blooms taxonomy of educational objectives [5] as inspiration for an approach to a knowledge enhancement effort that makes the building sector reflect on projects. This taxonomy consists of six steps aiming at production of new or original work based on a process of remembering, understanding, applying, analyzing, evaluating and creating. The building sector will implicitly go through a process of consciousness and expand their knowledge about UD and about how UD can add to architectural thinking without compromising architectural quality.

References

- [1] http://sim.dk/media/946360/8_disability_policy_action_plan_2013_-_one_society_for_all.pdf
[accessed 9 June 2016]
- [2] Kirkeby, I.M., Ryhl, C. & Frandsen, A.K., *Funktionsbaserede tilgængelighedskrav?: Analyse af udfordringer og barrierer for en eventuel ændring af bygningsreglementets detaljerede tilgængelighedskrav til funktionsbaserede krav. SBI 2014:09*, Statens Byggeforskningsinstitut, København, 2014.
- [3] Kirkeby, I. M. Accessible Knowledge—Knowledge on accessibility. *Journal of Civil Engineering and Architecture*, **9**, (2015), 534-546.
- [4] Grangaard, S., Øjenåbnere og erfaring i universel design, *Nordic Journal of Architectural Research*, in press, **28**, (2016).
- [5] Bloom, B.S., Krathwohl, D.K and Masia, B.S, *Taxonomi of Educational Objectives. The Classification of Educational Goals. Handbook 1: Cognitive Domain*. David McKay Company, Inc. New York, 1956.